
BULLETIN

of the

Chicago Herpetological Society



Volume 52, Number 3
March 2017



BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY

Volume 52, Number 3

March 2017

Miscellanea Herpetologica Gabonica VIII	41
. Olivier S. G. Pauwels, Laurent Chirio, Emily J. Neil, Stéphane Berry, Nicolas Texier and Cooper Rosin	
Reproduction in Zebra-tailed Lizards, <i>Callisaurus draconoides</i> (Squamata: Phrynosomatidae), from Nevada . . .	Stephen R. Goldberg 47
Snake Sightings, Marion County, Iowa, 2010–2016	Stephen R. Johnson and Mary Stark 49
You Can't Get Blood out of a Coitus, and Other Sticky Situations	Roger A. Repp 51
What You Missed at the February Meeting	John Archer 54
Herpetology 2017	56
The Tympanum	Paul Breese 58
Minutes of the CHS Board Meeting, February 10, 2017	58
Advertisements	59
In Memoriam: H. William “Bill” Peterson	60
News and Announcements: Show Schedule; New CHS Members This Month	60

Cover: Combat between two adult male Jameson’s mambas, *Dendroaspis j. jamesoni*, at Biboulou in Woleu-Ntem Province, northeastern Gabon. Photographs by S. Berry.

STAFF

Editor: Michael A. Dloogatch—mdloogatch@chicagoherp.org

2017 CHS Board of Directors

President: Rich Crowley
Vice-president: Jessica Wadleigh
Treasurer: Andy Malawy
Recording Secretary: Gail Oomens
Media Secretary: Morgan Lantz
Membership Secretary: Mike Dloogatch
Sergeant-at-arms: Mike Scott
Members-at-large: Dan Bavrisha
 Lisette Chapa
 Linda Malawy
Immediate past President: John Bellah

The Chicago Herpetological Society is a nonprofit organization incorporated under the laws of the state of Illinois. Its purposes are education, conservation and the advancement of herpetology. Meetings are announced in this publication, and are normally held at 7:30 P.M., the last Wednesday of each month.

Membership in the CHS includes a subscription to the monthly *Bulletin*. Annual dues are: Individual Membership, \$25.00; Family Membership, \$28.00; Sustaining Membership, \$50.00; Contributing Membership, \$100.00; Institutional Membership, \$38.00. Remittance must be made in U.S. funds. Subscribers outside the U.S. must add \$12.00 for postage. Send membership dues or address changes to: Chicago Herpetological Society, Membership Secretary, 2430 N. Cannon Drive, Chicago, IL 60614.

Manuscripts published in the *Bulletin of the Chicago Herpetological Society* are not peer reviewed. Manuscripts should be submitted, if possible, on IBM PC-compatible or Macintosh format diskettes. Alternatively, manuscripts may be submitted in duplicate, typewritten and double spaced. Manuscripts and letters concerning editorial business should be sent to: Chicago Herpetological Society, Publications Secretary, 2430 N. Cannon Drive, Chicago, IL 60614. **Back issues** are limited but are available from the Publications Secretary for \$2.50 per issue postpaid.

Visit the CHS home page at <<http://www.Chicagoherp.org>>.

The Bulletin of the Chicago Herpetological Society (ISSN 0009-3564) is published monthly by the Chicago Herpetological Society, 2430 N. Cannon Drive, Chicago IL 60614. Periodicals postage paid at Chicago IL. **Postmaster:** Send address changes to: Chicago Herpetological Society, Membership Secretary, 2430 N. Cannon Drive, Chicago IL 60614.

Miscellanea Herpetologica Gabonica VIII

Olivier S. G. Pauwels¹, Laurent Chirio², Emily J. Neil³, Stéphane Berry⁴, Nicolas Texier⁵ and Cooper Rosin⁶

Abstract

We present new Gabonese locality records for *Kinixys erosa* (Testudinidae), *Mecistops cataphractus*, *Osteolaemus tetraspis* (Crocodylidae), *Hemidactylus fasciatus* (Gekkonidae), *Feylinia grandisquamis* (Scincidae), *Varanus ornatus* (Varanidae), *Calabaria reinhardtii* (Boidae), *Hapsidophrys smaragdinus*, *Rhynchophis aethiopissa aethiopissa* and *Toxicodryas pulverulenta* (Colubridae), *Dendroaspis jamesoni jamesoni* (Elapidae), *Python sebae* (Pythonidae) and *Atheris squamigera* (Viperidae). We refer all Gabonese records of *Boaedon fuliginosus* and *B. lineatus* to *B. perisilvestris* and *B. littoralis*, respectively. We report predation cases of *Python sebae* on cattle (Cetartiodactyla: Bovidae: *Bos taurus*, N'dama breed). We illustrate the resemblance of the defensive display of a caterpillar of *Papilio demodocus* (Lepidoptera: Papilionidae) to three green arboreal colubrids found in Gabon. We add one species each to Estuaire, Moyen-Ogooué, Nyanga, Ogooué-Lolo and Woleu-Ntem Provinces' reptile lists.

Keywords

Biodiversity, herpetofauna, herpetology, Testudines, Crocodylia, Squamata, protected areas, conservation, Gabon, Equatorial Africa, defensive display, mimicry.

Introduction

The series *Miscellanea Herpetologica Gabonica* is a forum created in order to gather and present various new data on the zoogeography and the natural history of the reptiles of Gabon (see Pauwels, Carlino et al., 2016; Pauwels, Le Garff et al., 2016). The present volume includes data collected during field work performed by the teams of the Max Planck Institute for Evolutionary Anthropology and the forestry company Precious Woods Gabon. A record in Mabounié was made in the frame of environmental surveys for a project by Maboumine company to exploit a polymetallic deposit, and the Bendé Islet records were made during environmental monitoring for Shell Gabon. New records by NT in Ogooué-Lolo Province were made in the frame of botanical surveys organized by the Missouri Botanical Garden to list the endangered plant species of Gabon.

Material and Methods

New photographic material was identified based on the keys provided by Pauwels and Vande weghe (2008). Paired meristic characters are given left/right.

Abbreviations: MNHN, Muséum National d'Histoire Naturelle, Paris, France; SEEF, Société Equatoriale d'Exploitation Forestière. Morphology: A = anal plate; AT = anterior temporals; DSR = number of dorsal scale rows; IL = number of infralabials, followed in brackets by the number of IL in contact with the first pair of sublinguals; Lor = number of loreal scales; M = male; PoO = number of postoculars; PreO = number of preoculars; PV

= number of prefrontals; SC = number of subcaudals; SL = number of supralabials, followed in brackets by the SL in contact with orbit; U = unkeeled; VEN = number of ventral scales. Varia: Dept = Department; NP = National Park; Prov. = Province.

Results

Testudines

Testudinidae

Kinixys erosa (Schweigger, 1814)

On 9 June 2016 one of us (EJN) photographed a hatchling individual, still having its egg tooth, in a SEEF logging concession (0°20'37.7"N, 10°22'50.2"E), about 2 km S of the southernmost point of the eastern part of the Monts de Cristal National Park, Komo Dept, Estuaire Prov. (Figure 1; for the park limits see Vande weghe et al., 2016). EJN photographed another individual, adult, in the same locality on 9 Oct. 2015. New locality record (Pauwels et al., 2002; Pauwels and Vande weghe, 2008).

Crocodylia

Crocodylidae

Mecistops cataphractus (Cuvier, 1824)

Zinga Koumba et al. (2016) reported "*Tomistoma schlegelii*" from a swampy clearing, the "Baï de Momba." They provided the coordinates "0.027°N, 13.424°E," a point located in Sébé-Brikolo Dept of Haut-Ogooué Prov., just along the border with Ogooué-Ivindo Prov. They provided the French common name *faux gavial*, a name normally applied to the Southeast Asian species *Tomistoma schlegelii* (Müller, 1838), and sometimes

1. Département des Vertébrés Récents, Institut Royal des Sciences naturelles de Belgique, Rue Vautier 29, B-1000 Brussels, Belgium. ospauwels@yahoo.fr; corresponding author

2. 14 rue des roses, 06130 Grasse, France. lchirio@hotmail.com

3. School of Geography and the Environment, University of Oxford, South Parks Road, Oxford, OX1 3QY, UK. emjneil@gmail.com

4. Precious Woods Gabon, P.O. Box 993 Libreville, Quartier Akournam II, GA-Owendo, Gabon. berrygabon@yahoo.fr

5. Université Libre de Bruxelles, Unité de recherche Evolution biologique et Ecologie, Herbarium et Bibliothèque de Botanique Africaine, Avenue Franklin Roosevelt 50, CP 265, 1050 Brussels, Belgium. nicolas.texier@ulb.ac.be

6. Nicholas School of the Environment, Duke University, 450 Research Drive, Durham, NC 27708, USA. cooper.rosin@duke.edu



Figure 1. Live hatchling *Kinixys erosa* in situ at a logging concession of the Société Equatoriale d'Exploitation Forestière, Estuaire Prov. (the pen was placed in the foreground to indicate its small size). Photograph by E. J. Neil.

applied to *Mecistops cataphractus* in Gabon, hence the confusion made by these authors. The slender-snouted crocodile had not yet been recorded from this dept (Pauwels, 2006; Pauwels and Vande weghe, 2008).

Osteolaemus tetraspis Cope, 1861

On 2 July 2016 one of us (EJN) photographed an adult individual on the ground in a SEEF logging concession (0°20'37.7"N, 10°22'50.2"E), about 2 km S of the southernmost point of the eastern part of the Monts de Cristal National Park, Komo Dept, Estuaire Prov. New locality record (Pauwels et al., 2002; Pauwels and Vande weghe, 2008).

Squamata

Gekkonidae

Hemidactylus fasciatus Gray, 1831

In a report on a field survey of blood-sucking arthropods of the caves located in the surroundings of Lastoursville, Mouloundou Dept, Ogooué-Lolo Prov., Obame Nkoghe (2013: 13) provided a photograph of a gecko taken in “Siyon 2” cave. They did not identify the species, but its light brown dorsal color, red eyes, and the three dark brown saddle-shaped blotches on the dorsum between the fore and hind-limb insertions with white tubercles on the blotches' edges allow us to unambiguously identify it as *Hemidactylus fasciatus*. In the same dept, one of us (LC) observed an adult individual and a clutch of two eggs in Mbera Cave (Grotte de Mbera; 0°54'49.3"S, 12°50'21.2"E) on 10 July 2015. The eggs had been laid on the bat guano covering the floor of the cave, 7 m in from the entrance. They hatched in



Figure 3. Live *Feylinia grandisquamis* in situ near Mabounié, Moyen-Ogooué Prov. Photograph by L. Chirio.



Figure 2. Live adult *Hemidactylus fasciatus* in Youmbidi Cave, Ogooué-Lolo Prov. Photograph by L. Chirio.

mid-August in captivity, allowing a confirmation of their specific identity. The species is thus currently recorded from three caves in this dept (Pauwels et al., 2017; Figure 2 above). Egg deposition by geckos in caves had not been recorded previously in Gabon.

Scincidae

Feylinia grandisquamis Müller, 1910

An adult individual (Figure 3) was found on 30 January 2012 by one of us (LC) near Mabounié, 40 km ESE of Lambaréné, Ogooué & Lacs Dept, Moyen-Ogooué Prov. It was hidden by day under a corrugated iron sheet. New prov. record (Pauwels and Vande weghe, 2008).

Varanidae

Varanus ornatus (Daudin, 1803)

On 29 Jan. 2015 one of us (CR) photographed an adult individual basking on an old overgrown road in secondary forest (0°19'19.5"N, 12°34'00.9"E) in Lopé Dept of Ogooué-Ivindo Prov., less than one km W of Ivindo NP (Figure 4). New locality record (Pauwels and Vande weghe, 2008). Mindonga-Nguelet et al. (2016) reported an observation of the species (under *V. niloticus* and *V. nitidus* [sic]) from a swampy clearing, the “Baï de Momba,” in Sébé-Brikolo Dept of Haut-Ogooué Prov. The ornate monitor had not yet been recorded from this dept (Pauwels and Vande weghe, 2008; Pauwels, Le Garff et al., 2016).



Figure 4. Live adult *Varanus ornatus* basking on a forest road in Lopé Dept, Ogooué-Ivindo Prov. Photograph by C. Rosin.

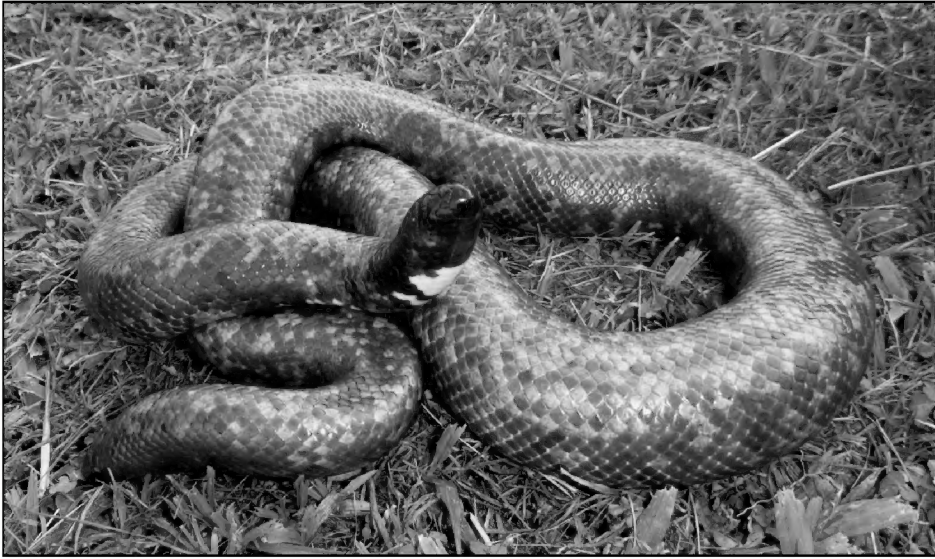


Figure 5. Live *Calabaria reinhardtii* in Kango, Estuaire Prov., north-western Gabon, showing its tail as a defensive display. Photograph by L. Chirio.

Boidae

Calabaria reinhardtii (Schlegel, 1851)

One of us (LC) examined on 21 July 2013 a dead-on-road individual in a rubber tree plantation (Siat Gabon company) in Bitam, Ntem Dept, Woleu-Ntem Prov. New prov. record. Woleu-Ntem is the only Gabonese province from where the Calabar boa had not been recorded so far (Pauwels and Vande weghe, 2008). LC also photographed on 13 June 2014 an adult individual in Kango, Komo Dept, Estuaire Prov. (Figure 5). New locality record (Pauwels and Vande weghe, 2008). These new records illustrate the ubiquity of this species in Gabon and its ability to live in both pristine and highly disturbed environments.

Colubridae

Hapsidophrys smaragdinus (Schlegel, 1837)

In the morning of 26 Feb. 2010, one of us (OSGP) observed an adult individual on the jetty of Bende Islet in Ndogo Lagoon, Ndougou Dept, Ogooué-Maritime Prov. New record for the islet (Pauwels et al., 2006). About 20 meters away and a few minutes later, OSGP photographed a caterpillar of *Papilio demodocus* Esper, 1798 (Lepidoptera: Papilionidae) displaying a defensive behavior making it remarkably similar to a snake fore-body (Figure 6). Its leaf-green color with black bands and its large eye-like ocellae evoke three arboreal colubrids which are well known from the same area, *Hapsidophrys smaragdinus*, *Rham-*



Figure 7. Live adult *Rhamnophis aethiopissa aethiopissa* in Mayumba, Nyanga Prov., southeastern Gabon, inflating its neck as a defensive display. Photographer unknown.



Figure 6. Caterpillar of *Papilio demodocus* (Papilionidae) in defensive display on Bende Islet, Ogooué-Maritime Prov., southwestern Gabon. Photograph by O. S. G. Pauwels.

nophis aethiopissa aethiopissa and *R. batesii* (Boulenger, 1908). To a lesser extent it is also reminiscent of *Thelotornis kirtlandii* (Hallowell, 1844), including by its horizontally elliptical “pupil” and its black furcated “tongue” with reddish tips (although these colors are inverted in the tongue of the latter snake, see Pauwels and Vande weghe, 2008: Fig. 243). The tongue of *R. a. aethiopissa* is uniformly black (see front cover illustration of Pauwels and Vande weghe, 2008). The tongue of *H. smaragdinus* found in the area is dark bluish (OSGP, pers. obs.).

Rhamnophis aethiopissa aethiopissa Günther, 1862

Figure 7 illustrates an adult individual encountered on 26 July 2013 on a road in Mayumba, Haute-Banio Dept, Nyanga Prov. When approached, it raised its head and inflated its throat (as is visible on the photograph), a common defensive display for this species. New prov. record (Pauwels and Vande weghe, 2008).

Toxicodryas pulverulenta (Fischer, 1856)

An adult individual was photographed by one of us (NT) on 11 Dec. 2016 in a forest (0°10'22.7"S, 12°31'48.6"E, alt. 581 m asl) in Mouloundou Dept, Ogooué-Lolo Prov., within the southern part of Ivindo NP (Figure 8). New prov. record (Pauwels and Vande weghe, 2008). This species had been so far recorded only from the northern part of Ivindo NP in Ogooué-Ivindo Prov. (Carlino and Pauwels, 2015; Pauwels et al., 2017).



Figure 8. Live adult *Toxicodryas pulverulenta* in the southern part of Ivindo National Park, Ogooué-Lolo Prov. Photograph by N. Texier.



Figure 9. Combat between two adult male *Dendroaspis j. jamesoni* at Biboulou in Woleu-Ntem Prov., northeastern Gabon. Photograph by S. Berry.

Elapidae

Dendroaspis jamesoni jamesoni (Traill, 1843)

On 6 June 2016 at Biboulou, the access point to a logging concession of Rougier Gabon (“CFAD du Haut-Abanga”), SW of Lalara crossroad, Okano Dept, Woleu-Ntem Prov., one of us (SB) observed a 15-minutes-long interaction between two adult males (Figure 9 and cover). They were of comparable length and size, one with a general yellowish green color, the other with a bluish green color. Many photographs were taken by SB, on which it can be seen that the yellowish individual was constantly subduing the bluish one and pinning it to the ground. The numerous photographs allowed noting a number of meristic characters, reported in Table 1. The yellowish male showed one small extralabial on the left side between SL 6 and 7. It is the first time a combat between males is documented for this species in Gabon. An adult mamba was photographed on 8 Nov. 2015 by EJN in a SEEF logging concession (0°20'37.7"N, 10°22'50.2"E), about 2 km S of the southernmost point of the eastern part of the Monts de Cristal National Park, Komo Dept, Estuaire Prov. (Figure 10). New prov. record (Pauwels and Vande weghe, 2008). On 17 Nov. 2015 one of us (NT) photographed an adult individual crossing a forest road in secondary forest (0°38'53.2"S, 12°44'42.2"E; alt. 323 m asl) in a Precious Woods concession about 20 km NNE of Lastoursville, Mouloundou Dept, Ogooué-Lolo Prov. Although the photograph was taken from a distance, its specific identity is unambiguously recognizable through the extremely elongate body and the elongate head, the green fore-body with a wide vertebral black stripe and the yellow tail. New dept record (Pauwels and Vande weghe, 2008).

Lamprophiidae

Boaedon littoralis Trape in Trape & Mediannikov, 2016

We follow Trape and Mediannikov (2016) in transferring all



Figure 10. *Dendroaspis j. jamesoni* moving through a tree at a logging concession of the Société Equatoriale d'Exploitation Forestière, Estuaire Prov. Photograph by E. J. Neil.

Gabonese *Lamprophis* species to the genus *Boaedon* Duméril, Bibron & Duméril, 1854. Their review of Central African *Boaedon* restricted *B. fuliginosus* and *B. lineatus* to West Africa, implying that these two species have to be deleted from the list of snakes found in Gabon. In their description of *Boaedon littoralis* they mentioned that the species occurs in Mayumba although not referring to voucher material. Pauwels and Vande weghe (2008: 210) illustrated under the name *Lamprophis lineatus* a preserved individual (MNHN 1899.0129) from Mayumba and referred to three other MNHN specimens from the same locality. We here re-identify these specimens as *Boaedon littoralis* based on the key and diagnosis provided by Trape and Mediannikov (2016). Within Gabon, this species is thus currently known only from Mayumba in Nyanga Prov. Trape and Mediannikov (2016) proposed the French common name *boaedon côtier* as a translation of the specific epithet which stresses that the species lives along the coast in Gabon and Congo, and we hence propose “coastal house snake” as the English common name.

Boaedon perisilvestris Trape & Mediannikov, 2016

Trape and Mediannikov (2016) attributed the specimens MNHN 1886.224-226 from “Franceville [Haut-Ogooué Prov.], Gabon” to their new species *Boaedon perisilvestris*. They indicated that the largest known specimen in this species is the female MNHN 1886.224 which has a total length of 1033 mm. They mentioned that the live individual illustrated by Pauwels and Vande weghe (2008, under *Lamprophis fuliginosus*) belongs to this species. We consequently transfer all the current Gabonese records of *B. fuliginosus* to *B. perisilvestris*. Within Gabon, the species is so far known only from Franceville in Haut-Ogooué Prov. (Pauwels

Table 1. Morphological data for two *Dendroaspis j. jamesoni* from Biloubou, Woleu-Ntem Prov. NA = character not available (individual not collected). For the other abbreviations see Materials and Methods.

Individual	Sex	SVL (mm)	TaL (mm)	DSR	PV + VEN	A	SC	SL	IL	Lor	PreO	PoO	AT
Bluish individual (see sp. account)	M	NA	NA	NA, U	2 + NA, U	NA	NA, U	8 (4) / 8 (4)	9 (4) / 9 (4)	0 / 0	3 / 3	5 / 3	1 / 1
Yellowish individual (see sp. account)	M	NA	NA	NA, U	2 + NA, U	NA	NA, U	7 (4) / 8 (4)	9 (4) / 9 (4)	0 / 0	3 / 3	4 / 4	1 / 1



Figure 11. Adult *Python sebae* in situ at a logging concession of the Société Equatoriale d'Exploitation Forestière, Estuaire Prov. Photograph by E. J. Neil.

and David, 2008, providing a morphological description of MNHN 1886.224-226). The common French name *boaedon périforestier* proposed by Trape and Mediannikov (2016) can be translated into English as “peri-forest house snake.”

Pythonidae

Python sebae (Gmelin, 1789)

One of us (EJN) photographed on 20 April 2016 an adult individual in a SEEF logging concession (0°20'37.7"N, 10°22'50.2"E), about 2 km S of the southernmost point of the eastern part of the Monts de Cristal National Park, Komo Dept, Estuaire Prov. (Figure 11). New locality record (Pauwels and Vande weghe, 2008). Figure 12 shows an adult individual killed after it had killed and eaten on 5 Dec. 2012 a calf of the N'dama cattle breed (Cetartiodactyla: Bovidae: *Bos taurus* Linnaeus, 1758) at Siat Nyanga Ranch, Mougoutsi Dept, Nyanga Prov. Another photo of an adult python killed after it ate a calf in the ranch was presented by Anonymous (2010). Predation by pythons on calves is a frequent issue in Nyanga Ranch, which used to offer a financial reward to employees who killed a python, lower if the python was found to have already eaten a calf (Anonymous, 2007a). Employees were encouraged to eat pythons as well (Anonymous, 2007b). Seba's python was not recorded from Nyanga Prov. by Pauwels and Vande weghe (2008), but was later recorded from two districts within the province, Haute-Banio (Pauwels, 2010) and Mougoutsi (Anonymous, 2010; Figure 12). It is to be noted that Cooke (2012)



Figure 13. Adult *Atheris squamigera* at a logging concession of the Société Equatoriale d'Exploitation Forestière, Estuaire Prov. Photograph by E. J. Neil.



Figure 12. Adult *Python sebae* killed after having ingested a N'dama calf (*Bos taurus*) at Siat Nyanga Ranch, southwestern Gabon. Photograph by C. Brochard.

documented a case of predation by a Seba's python on a Red-capped Mangabey (Primates: Cercopithecidae: *Cercocebus torquatus* (Kerr, 1792)) in Setté Cama, Ogooué-Maritime Prov., southwestern Gabon. Two interesting photos of a male-male ritual combat taken in 2011 in Wonga-Wongué Presidential Reserve were published by Vande weghe (2012: 124-125). The combat took place at around 5 P.M. in June (i.e., just before the long dry season), in the tall grass of a savanna, with an adult female staying at proximity of the two males. The site was located just near a gallery forest, a few km W of “Vallée morte” (J. P. Vande weghe, pers. comm., Dec. 2016).

Viperidae

Atheris squamigera (Hallowell, 1856)

One of us (EJN) photographed on 31 Oct. 2015 an adult individual in a SEEF logging concession (0°20'37.7"N, 10°22'50.2"E), about 2 km S of the southernmost point of the eastern part of the Monts de Cristal NP, Komo Dept, Estuaire Prov. (Figure 13). Its swollen belly indicates that it had ingested a large prey. New locality record (Pauwels et al., 2002). On 18 Nov. 2015 one of us (NT) encountered an individual in a forest (0°40'47.7"S, 13°30'30.0"E, alt. 508 m asl) in a Precious Woods concession in Mouloundou Dept near the easternmost point of Ogooué-Lolo Prov. (Figure 14). New dept record (Pauwels and Vande weghe, 2008).



Figure 14. *Atheris squamigera* at a logging concession of the Compagnie Equatoriale des Bois, Ogooué-Lolo Prov. Photograph by N. Texier.

Acknowledgments

OSGP dedicates this contribution to his late father Pascal Angelus Roger Pauwels (Zulte, 25 May 1935 – Brussels, 11 Sept. 2016) who transmitted him his passion for Africa. The observations on Bende Islet by OSGP were made during environmental impacts assessments for Shell Gabon. EJN's observations were made while she was working for the Max Planck Institute for Evolutionary Anthropology (PanAfrican

Programme: The Cultured Chimpanzee). We thank Philippe Jeanmart (Precious Woods Gabon), Ephrem Nzengue (CENAREST, Libreville), Judicaël Obame Nkoghe (CIRMF, Franceville) and Jean Pierre Vande weghe (Agence Nationale des Parcs Nationaux, Libreville) for providing useful information. We are grateful to Mike Dloogatch for editorial support, to Jean-Louis Amiet (Nyons) for the identification of the caterpillar, and to Charlene Brochard (formerly at Siat Nyanga Ranch) for her photo of a python.

Literature Cited

- Anonymous. 2007a. Une prime mensuelle de 5000 à 7000 F CFA pour tout agent du Ranch qui tue un python. SIAT Infos 5:29.
- Anonymous. 2007b. Le python, la chair qui rend jaloux. SIAT Infos 5:29.
- Anonymous. 2010. Je reviens du Ranch Nyanga. SIAT Infos 8:17.
- Carlino, P., and O. S. G. Pauwels. 2015. An updated reptile list of Ivindo National Park, the herpetofaunal hotspot of Gabon. Bulletin of the Chicago Herpetological Society 50(3):25-39.
- Cooke, C. A. 2012. The feeding, ranging, and positional behaviors of *Cercocebus torquatus*, the Red-Capped Mangabey, in Sette Cama, Gabon: A phylogenetic perspective. PhD Dissertation, The Ohio State University.
- Mindonga-Nguelet, F. L., C. R. Zinga Koumba, D. Midoko Iponga, E. Nzengue, C. O. Mikala, J. Okouyi Okouyi, B. M'batchi, J. F. Mavoungou and M. Shongo. 2016. Identification et caractérisation de la dynamique de la grande faune dans le baï de Momba (nord-est Gabon). International Journal of Biological and Chemical Sciences 10(3):1037-1047.
- Obame Nkoghe, J. 2013. Etude des risques sanitaires liés aux arthropodes hématophages et aux chiroptères des grottes de Lastourville [sic]. Mission préliminaire d'identification des arthropodes hématophages et des chauve [sic] souris dans les grottes de Lastourville [sic] du 8 au 16 août 2013. Rapport d'activité. Franceville: Centre International de Recherches Médicales de Franceville.
- Pauwels, O. S. G. 2006. Crocodiles and national parks in Gabon. Crocodile Specialist Group Newsletter 25(1):12-14.
- . 2010. Les parcs nationaux au travers de leurs espèces. Le python de Seba. Tendances & Infos Magazine 80:6.
- Pauwels, O. S. G., T. Biyogho Bi Essono II, P. Carlino, L. Chirio, B. Huijbregts, T. E. J. Leuteritz, D. Rousseaux, E. Tobi, C. Vigna and W. Van Neer. 2017. Miscellanea Herpetologica Gabonica VII. Bulletin of the Chicago Herpetological Society 52(1):1-7.
- Pauwels, O. S. G., M. Burger, W. R. Branch, E. Tobi, J.-A. Yoga and E.-N. Mikolo. 2006. Reptiles du Complexe d'Aires Protégées de Gamba, sud-ouest du Gabon. Pp. 91-100. In: A. Alonso, M. E. Lee, P. Campbell, O. S. G. Pauwels and F. Dallmeier, editors, Gamba, Gabon: Biodiversité d'une forêt équatoriale africaine / Gamba, Gabon: Biodiversity of an equatorial African rainforest. Washington: Bulletin of the Biological Society of Washington (12).
- Pauwels, O. S. G., P. Carlino, L. Chirio and J.-L. Albert. 2016. Miscellanea Herpetologica Gabonica IV. Bulletin of the Chicago Herpetological Society 51(5):73-79.
- Pauwels, O. S. G., and P. David. 2008. Miscellanea Herpetologica Gabonica I. Hamadryad 32(1):13-18.
- Pauwels, O. S. G., A. Kamdem Toham and C. Chimsunchart. 2002. Recherches sur l'herpétofaune des Monts de Cristal, Gabon. Bulletin de l'Institut Royal des Sciences Naturelles de Belgique 72:59-66.
- Pauwels, O. S. G., B. Le Garff, I. Ineich, P. Carlino, I. Melcore, L. Boundenga, C. Vigna, T. Stévert, K. Jeffery, C. Orbell, J.-B. Squarcini, J. P. Vande weghe and L. J. T. White. 2016. Miscellanea Herpetologica Gabonica V & VI. Bulletin of the Chicago Herpetological Society 51(11):177-185.
- Pauwels, O. S. G., and J. P. Vande weghe. 2008. Reptiles du Gabon. Washington: Smithsonian Institution.
- Trape, J.-F. and O. Mediannikov. 2016. Cinq serpents nouveaux du genre *Boaedon* Duméril, Bibron & Duméril, 1854 (Serpentes: Lamprophiidae) en Afrique centrale. Bulletin de la Société Herpétologique de France 159:61-111.
- Vande weghe, J. P. 2012. Wonga-Wongué. Libreville: Agence Nationale des Parcs Nationaux.
- Vande weghe, J. P., P. Christy, M. Ducrocq, M. Lee, G. Vande weghe and O. S. G. Pauwels. 2016. Biodiversité des parcs nationaux et réserves du Gabon. 2. Espèces, écosystèmes et populations. Libreville: Agence Nationale des Parcs Nationaux.
- Zinga Koumba, C. R., D. Midoko Iponga, E. Nzengue, A. P. Maroundou, G. Zabiti Kandolo, A. P. Maroundou, C. Mikala Okouyi, M. Shongo, B. M'batchi and J. F. Mavoungou. 2016. Dynamique de fréquentation des grands mammifères dans une clairière marécageuse: Cas du Baï de Momba au nord-est du Gabon. Journal of Applied Biosciences 103:9877-9885.

Reproduction in Zebra-tailed Lizards, *Callisaurus draconoides* (Squamata: Phrynosomatidae), from Nevada

Stephen R. Goldberg
Biology Department, Whittier College
Whittier, CA 90608
sgoldberg@whittier.edu

Abstract

A histological examination of gonadal material from zebra-tailed lizards, *Callisaurus draconoides* from Nevada revealed a spring–early summer period of spermiogenesis (sperm formation). Testicular regression commenced in July and was completed in August. The smallest reproductively active male (spermiogenesis) measured 62 mm SVL. Females were reproductively active May into August (no April females were examined). Mean clutch size (N = 6) was 3.7 ± 1.0 SD, range = 2–5. *Callisaurus draconoides* females in Nevada may produce more than one egg clutch in the same reproductive season. The smallest reproductively active female (oviductal eggs) measured 62 mm SVL. In a recent reproductive study of *C. draconoides* from Baja California Sur, Mexico, Goldberg (2015) reported August reproductive activity in both sexes with spermiogenesis in males and enlarged follicles (> 4 mm) and oviductal eggs in females, indicating a longer period of reproduction in this southern population of *C. draconoides*.

The zebra-tailed lizard, *Callisaurus draconoides* Blainville, 1835, ranges from northwest Nevada, south to southern Sinaloa, Mexico, and the tip of Baja California, and southwestern New Mexico to desert slopes of mountains in southern California (Stebbins, 2003). The most detailed studies on *C. draconoides* reproduction are by Kay et al. (1970), Pianka and Parker (1972), Tanner and Krogh (1975), Vitt and Ohmart (1977) and Smith et al. (1987). Brennan (2009) summarized the biology of *C. draconoides*. Goldberg (2015) recently published an account of *C. draconoides* reproduction in Baja California Sur, Mexico. See Goldberg (2013) for a listing of anecdotal information on *C. draconoides* reproduction. In this paper I provide additional information on the reproductive cycle of *C. draconoides* from Nevada utilizing a histological examination of museum specimens. My findings are compared with other studies on *C. draconoides* reproduction. Utilization of museum specimens for obtaining reproductive data avoids removing additional animals from the wild.

A sample of 103 *C. draconoides* consisting of 54 adult males (mean SVL = 75.7 mm $\pm$ 6.8 SD, range = 62–80 mm), 40 adult females (mean SVL = 69.5 mm $\pm$ 5.3 SD, range = 62–89 mm) and 9 juveniles (mean SVL = 46.7 mm $\pm$ 10.6 SD, range = 31–58 mm) from Nevada was examined from the herpetology collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California. *Callisaurus draconoides* were collected 1935 to 1964.

The snout–vent length (SVL) of each specimen was measured in mm from the tip of the snout to the posterior margin of the vent. The left gonad was removed and embedded in paraffin. Histological sections were cut at 5 μ m and stained with hematoxylin followed by eosin counterstain (Presnell and Schreiber, 1997). Enlarged follicles > 4 mm length and oviductal eggs were counted. No histology was performed on them. Histology slides were deposited at LACM. An unpaired *t*-test was used to compare *C. draconoides* male and female mean body sizes (SVL) using Instat (vers. 3.0b, Graphpad Software, San Diego, CA).

The male mean body size was significantly larger than the female mean body size (*t* = 4.7, *df* = 92, *P* = < 0.0001). Three

stages were noted in the testicular cycle of *C. draconoides* from Nevada (Table 1): (1) regression, germinal epithelium of the seminiferous tubules is reduced to a few layers of spermatogonia with interspersed Sertoli cells; (2) recrudescence, a proliferation of germ cells for the next period of sperm formation (spermiogenesis) is underway, primary spermatocytes predominate; (3) spermiogenesis, lumina of the seminiferous tubules are lined by clusters of sperm or metamorphosing spermatids. Spermiogenesis commenced in May and continued into August. I did not examine *C. draconoides* males from April so I am unable to state when spermiogenesis commenced in Nevada. It is not known when the two *C. draconoides* males from August with testes in recrudescence (Table 1) would have commenced spermiogenesis. Because of their small sizes (SVL = 63, 67 mm) respectively, they may have entered the breeding population the next spring. The smallest reproductively active male (spermiogenesis) measured 62 mm SVL (LACM 71627) and was collected in Pershing County during August. It is likely this male had recently reached adult size.

Four stages were noted in the ovarian cycle of *C. draconoides* (Table 2): (1) quiescent, no yolk deposition was observed; (2) early yolk deposition, basophilic granules in ooplasm; (3) enlarged oocytes > 4 mm; (4) oviductal eggs. Mean clutch size (N = 6) was 3.7 ± 1.0 SD, range = 2–5. Tanner and Krogh (1975) reported *C. draconoides* in Nevada laid one clutch of 3 to 6 eggs in June or early July. This is smaller than the value (4.42, N = 73) of Pianka and Parker (1972). The smallest reproductively active female (oviductal eggs) measured 62 mm SVL (LACM 126917) and was collected in August in Mineral County. The presence of one female with oviductal eggs

Table 1. Stages in the monthly testicular cycle of 54 adult male *Callisaurus draconoides* from Nevada.

Month	N	Regressed	Recrudescent	Spermiogenesis
May	17	0	1	16
June	7	0	1	6
July	19	8	0	11
August	11	8	2	1

Table 2. Stages in the monthly ovarian cycle of 40 *Callisaurus draconoides* adult females from Nevada; * one female with oviductal eggs and concurrent yolk deposition; ** one female with corpora lutea and concurrent yolk deposition; *** fused oviductal eggs could not be counted.

Month	N	Quiescent	Yolk deposition	Enlarged follicles > 4 mm	Oviductal eggs
May	6	3	2	1	0
June	6	2	1**	2	1*
July	19	13	4	2	0
August	9	8	0	0	1***

that was undergoing yolk deposition for a subsequent clutch and another female with corpora lutea from a previous clutch and concurrent yolk deposition for a subsequent clutch (Table 2) indicates *C. draconoides* from Nevada can produce multiple clutches in the same year. Tanner and Krogh (1975) suggested

multiple clutches were produced in Nevada.

My group of nine subadults varied greatly in size and contained at least two presumed young of the year (SVLs 31, 33 mm) and subadults of 56 and 58 mm SVL that were nearing adult size.

My findings on *C. draconoides* reproduction in Nevada are similar to those of Tanner and Krogh (1975) from Nye County, Nevada, as in both studies most spermiogenesis concludes in July. The reproductive cycle of *C. draconoides* in Nevada is similar to that in Arizona (Goldberg, 2013), although spermiogenesis in Arizona continues somewhat longer into August. The peak months of reproduction occur in spring both in Arizona and Nevada. Goldberg (2015) reported spermiogenesis in males and enlarged follicles (> 4 mm) and oviductal eggs in August for *C. draconoides* from Baja California Sur indicating a longer reproductive cycle in southern populations of *C. draconoides*.

Acknowledgment

I thank G. Pauly (LACM) for permission to examine *C. draconoides*.

Literature Cited

Brennan, T. C. 2009. Zebra-tailed lizard *Callisaurus draconoides* Blainville, 1835. Pp. 142-145. In: L. L. C. Jones and R. E. Lovich, editors, Lizards of the American Southwest: a photographic field guide. Tucson, Arizona: Rio Nuevo Publishers.

Goldberg, S. R. 2013. Reproduction of the zebra-tailed lizard, *Callisaurus draconoides* (Squamata: Phrynosomatidae) from California. *Sonoran Herpetologist* 26(4):74–76.

———. 2015. Reproduction of the zebra-tailed lizard, *Callisaurus draconoides* (Squamata: Phrynosomatidae) from Baja California Sur, Mexico. *Mesoamerican Herpetology* 2(4):509–514.

Kay, F. R., B. W. Miller and C. L. Miller. 1970. Food habits and reproduction of *Callisaurus draconoiodes* in Death Valley, California. *Herpetologica* 26(4):431–435.

Pianka, E. R., and W. S. Parker. 1972. Ecology of the iguanid lizard *Callisaurus draconoides*. *Copeia* 1972(3):493–508.

Presnell, J. K., and M. P. Schreibman. 1997. Humason’s Animal Tissue Techniques, 5th ed. Baltimore: The Johns Hopkins University Press.

Smith, D. D., P. A. Medica and S. R. Sanborn. 1987. Ecological comparisons of sympatric populations of sand lizards (*Cophosaurus texanus* and *Callisaurus draconoides*). *Great Basin Naturalist* 47(2):175–185.

Stebbins, R. C. 2003. A field guide to western reptiles and amphibians, third ed. Boston: Houghton Mifflin Company.

Tanner, W. W., and J. E. Krogh. 1975. Ecology of the zebra-tailed lizard *Callisaurus draconoides* at the Nevada test site. *Herpetologica* 31(3):302–316.

Vitt, L. J., and R. D. Ohmart. 1977. Ecology and reproduction of lower Colorado River lizards: I. *Callisaurus draconoides* (Iguanidae). *Herpetologica* 33(2):214–222.

Appendix

Callisaurus draconoides examined from Nevada, by county, from the herpetology collection of the Natural History Museum of Los Angeles County (LACM). **Churchill:** LACM 26909; **Clark:** LACM 14266, 71166; **Esmeralda:** LACM 70871–770877, 70879, 70880, 70882–70886, 70889–70891, 70893, 70896, 70902, 70903, 70906, 70908, 70909, 70911, 70913, 70914, 70917, 70919–70924, 70927, 70929–70931, 70933, 70935, 70938, 70939, 70942–70944; **Mineral:** LACM 126917; **Nye:** 61468, 67712–667717, 71095–71098, 71101–71110, 71115, 71117–71122, 71124, 71125, 71127–71130, 71290; **Pershing:** LACM 70894, 71616, 71617, 71619–71621, 71622, 71623, 71625–71632, 71634, 71635; **Washoe** LACM 14287.

Snake Sightings, Marion County, Iowa, 2010–2016

Stephen R. Johnson
Professor of Natural Sciences
Central College
812 University St
Pella, IA 50219
pseud8cris@yahoo.com

Mary Stark
Chair, Department of Humanities
Central College
812 University St
Pella, IA 50219

We are based in Marion County, Iowa, and have taken many forays to observe the local herps. While most forays are unproductive, a few have turned up either dead, but since 2012, more often live snakes. What follows is an annotated list, alphabetical by common name. All species in this list have at least state Protected status (LeClere, 2013).

Brown snake (*Storeria dekayi*): April 2013. Single specimen found basking on the Volksweg Trail, a 22.5-km-long, paved hiking and biking trail between the town of Pella, Iowa, and Red Rock Lake. This locality is near an artificial hillside overlooking an artificial embayment in the flood plain of the Des Moines River, about 3 km from the area of the Volksweg Trail where many midland, Texas and intergrade *S. dekayi* were found in the late 1990s and very early 2000s (Johnson and Stark, 2013).

S. dekayi: July 2016. We observed the tail of a retreating individual on the wildflower hill area of the Volksweg Trail.

S. dekayi: November 2016. A single individual on a 67°F afternoon basking on the Volksweg Trail about 25 meters north of the Volksweg Trail pond. We moved this immobile individual off the trail and onto a sunny area of trailside gravel, away from potential negative impacts from bicyclists.

While our recent sightings of brown snakes are still much rarer than during 1999–2002 (Johnson and Stark, 2013), these observations may show an increase in the population over levels of 2005–2012. This observed absence followed by limited increase in sightings may reflect the same strong population fluctuations observed by Henry S. Fitch in northeastern Kansas (Fitch, 1999).

Eastern hog-nosed snake (*Heterodon platirhinos*): April, 2013. Single 0.8 m specimen found near a Volksweg Trail pond that is inhabited by bullfrogs (*Lithobates catesbeianus*) and Blanchard's cricket frogs (*Acris blanchardi*), and was the site of the authors' Blanchard's cricket frog escape behavior study (Johnson and Stark, 2015).

Graham's crayfish snake (*Regina grahamii*): July 2016. Single 0.35 m individual basking on a segment of the Volksweg Trail that had been flooded in 2011 and previously. This section of the trail abuts an artificial embayment along the Des Moines River and is between one and two meters above the river at flood stage. We stayed with the snake until it was finally frightened away by bicyclists. This individual perhaps was still basking in an area where it had been overnight (LeClere, 2013), but was not anywhere near trees, which according to Johnson (2000) are frequently used as basking sites.

Northern water snake (*Nerodia sipedon sipedon*): August 2014. Single strongly melanistic individual observed over several days in late August 2014 hunting bullfrogs in the Volksweg Trail pond during the aforementioned Blanchard's cricket frog study. This individual was extremely wary and never exposed itself completely for an estimate of body length, but seemed to be the proportions of an adult.

Smooth green snake (*Opheodrys vernalis*): October 2012. Live specimen basking on the Volksweg Trail, about six meters north of the pond. We photographed and escorted the snake off the trail to another less lethal sunny area while forcing bicyclists to go around the snake. The only other *O. vernalis* observed (in October 2003) was a



Brown snake (*Storeria dekayi*), November 2016.



Smooth green snake (*Opheodrys vernalis*), October 2012.



Western fox snake (*Pantherophis ramspotti*). September 2016.

dead and crushed specimen found about three meters south of the position of the live specimen. We placed cover boards in the vicinity of the first sighting in March 2003 and checked in spring and fall of 2004 and 2005 but these boards failed to attract any snakes. This is a Special Concern species in Iowa with additional status of SGCN (Species of Greatest Conservation Need) and a Nature-Serve designation of S3, Vulnerable (LeClere, 2013: as *Liochlorophis vernalis*).

Western earth snake (*Virginia valeriae elegans*): November 2010. Single individual found recently crushed in the turnaround circle of the paved road through Fifield Park about 15 km from Pella. This perhaps indicates the presence of a population at this site; however subsequent

autumnal searches in 2011 through 2013 revealed no additional specimens, living or dead. This species also has an SGCN status, with NatureServe designation of S3 (LeClere, 2013).

Western fox snake (*Pantherophis ramspotti*): September 2013. Subadult. The area where it was observed was closed for construction soon after.

P. ramspotti: August 2014. A 0.75-meter subadult found dead in parking lot on University Avenue in Pella. This specimen was found in perfect condition, and was so recently deceased that rigor mortis had not yet set in. There were no visible signs of trauma and we speculate that perhaps the snake died in part because of traversing recently herbicide- and/or pesticide-treated lawns.

P. ramspotti: September 2016. A 1.25-meter-long adult observed crossing University Avenue about 10 meters north of the town limits. We parked our car and saw the snake struck by a small sports car that actually rolled the snake across the pavement and we feared that it had been killed. Instead, the snake showed no visible scarring or any evidence of crushing or contusion and was ambulatory and hostile as we simultaneously blocked it from traffic and escorted it to the roadside. We stayed long enough to observe its physical state following the automobile impact. A good indication of health was that it coiled and struck at us about four times before choosing to move in a direction away from the street.

Literature Cited

- Fitch, H. S. 1999. A Kansas snake community: Composition and changes over 50 years. Malabar, Florida: Krieger Publishing Company.
- Johnson, T. R. 2000. The amphibians and reptiles of Missouri, 2nd ed. Missouri Department of Conservation.
- Johnson, S. R., and M. Stark. 2013. Brown snakes (*Storeria dekayi*) in south central Iowa. Bulletin of the Chicago Herpetological Society 48(1):2-3.
- Johnson, S. R., and M. Stark. 2015. Plasticity of escape behavior in Blanchard's cricket frog (*Acris blanchardi*). Bulletin of the Chicago Hepetological Society 50(5):72-73.
- LeClere, J. B. 2013. A field guide to the amphibians and reptiles of Iowa. Rodeo, New Mexico: ECO Hepetological Publishing and Distribution.

You Can't Get Blood out of a Coitus, and Other Sticky Situations

Roger A. Repp

National Optical Astronomy Observatory

repp@noao.edu

In March of 2001, I joined forces with Dr. Gordon Schuett, then of Arizona State University West, to begin a radio-telemetry project with rattlesnakes. This project eventually grew to embrace four species of rattlesnakes, as well as Gila Monsters. The study lasted well beyond our expectations by carrying us all the way into January of 2016. Our reasons for stopping when we did were many, but the main reason was that neither of us could handle the physical demands of hoofing up and down the rugged terrain any longer. Neither of us was young at the start, and the effort to carry out this duty wrecked both of us for good. At a recent

gathering, we admitted to each other that it *was* this study that destroyed our bodies. But we also admitted that if we had it to do all over again — we'd do the same thing! The 15 years that we did this was a dream come true for both of us, and we would not have traded places with anyone.

This does not mean that our relationship was always one of bliss and harmony. Hell no — far from it! We approached the study from two different angles. With Schuett, it was an all out hard-core physiological approach to hypothesis-driven science. With me, it was a strong desire to keep all intrusions to a minimum. The study became a battle in the ages-old war between hard science versus natural history. But the differences didn't kill us — they made us stronger. In essence, the differences between the two architects of the study became the embodiment of the meaning of the current buzzword of academic institutions nationwide. Said buzzword is "diversity." Yeah — we had this here diversity thing going for us for sure!

Throughout the course of our study, this author emailed out reports of the more interesting events passing before our eyes. These emails all fell under the title of "The Suizo Report." They were called this simply because the study was transpiring in a mountain range called the Suizo Mountains. These reports were wildly popular, and I'm still hearing from people who are clamoring for more. I tell these people that the Suizo Mountain Project is over, but I continue to write columns for the *Bulletin of the Chicago Herpetological Society*. For 25 bucks a year, they join a worthy cause, and receive not only the ravings of this lunatic, but many solid contributions to the science of herpetology as well. This author appears to be a lousy salesman, for as soon as these fans of anything that's free learn that it might cost them 25 bucks to get more, they lose interest. The hate part of my love/hate relationship with herpers is that some are notorious cheapskates.



This pair of mating Western Diamond-backed Rattlesnakes (*Crotalus atrox*) set off a major confrontation between two herpetologists who had differing viewpoints on what to do with them. Close inspection of the tails in this image will reveal that a foreign object has joined in the act. See text for details. Image by the author, 13 September 2002

As soon as these Suizo Reports were emailed out, I would save them in a folder on my computer's hard drive. The intent was that one fine day, I would refine and combine them, and make a book of it all. As we all know, saving something to a hard drive does not mean that it has been saved properly. The hate part of my love/hate with myself is that I am great procrastinator. I never copied these files anywhere but on that hard drive. As one might guess, in 2014, a virus that I am calling the "Suizo Buzzworm" attacked my computer. As computer viruses go, this one was relatively minor, but it gobbled the heart and soul

out of my Suizo Report file — 95% of everything I had written was gone. But there were some survivors.

One of these surviving Suizo Reports brought about such an avalanche of positive responses that this author will share it with you. In order to keep some of the words intact, a little background information is required. At one point, Schuett moved to Georgia, and returned shortly thereafter. As Georgia is widely known as the Peach State, I hung the nickname "The Peach" on Gordon.

As Gordon's son Emory was along on this misadventure, he became the "Peach Pit." The "Bunny Hugger" would be me. In order to be fair to our editor, I have embellished this report somewhat in order for it to be considered "original." (I firmly believe that editor and reader alike will agree that things don't get *any* more original than this.) While the exact words spoken between the warring factions involved have been toned down considerably, everything else described in this piece is true. Without further illumination, we jump right into the fray of this Suizo Report, which was originally sent in September of 2003.

§

The first mating season for *atrox* is now in full swing. To my mind this is actually the second mating season, the first occurring in March to mid-April. But leave it to science to convolute the whole issue by ignoring the astronomical calendar, whilst ordaining that "the first shall be the last." See, the way this works is that last March, the *atrox* under my watch were mating like mink. That would have been their "second mating season." What they are doing now is entering their "first mating season." I've scheduled a full frontal lobotomy for myself, in hopes that this will someday all become crystal clear.

It has been my privilege to see *atrox* locked-up in love's embrace over 20 times. Each has been memorable, but none

quite like what happened on the evening of September 13, 2002. The event involved a pair of *atrox*, to be sure, but also created a collision between a hard core naturalist and an equally hard core viper physiologist.

The receiver is throwing out its blips with efficacy, the volume increasing with every footstep. The Bunny Hugger holds his antenna high in a Statue of Liberty pose, and continues to advance toward the direction the blips seem the loudest. Trailing the Bunny Hugger is the illustrious Peach, flanked by the fruit of his loins, Peach Pit. Flashlights sweep erratically around on the ground, piercing the black velvet of a September evening. Some high stepping and low curses are occurring as the trio bob and weave through the harsh shrubbery. Eventually, the beam of Bunny Hugger's light illuminates a six-foot-long rattlesnake sprawled across an open *bajada* area on the floor of the Swiss Mountains. What a monstrously lanky snake it appears to be!

But wait a minute! That's not a six-foot-long rattlesnake—that's two three-foot-long rattlesnakes! One is crawling forward, one is crawling backward. The two are joined at the tail. The lead snake is their quarry, a female *atrox*, "Dianna" by name. She carries a transmitter in her innards, and has a black colored rattle for quick identification purposes. The rear snake's rattle carries no color. They do not "know" this boy.

A close look at the tails tells all. Dianna's cloaca gapes wide open, showing pink. A suspicious bulge appears in the rearmost portion of her body—no doubt caused by something that has been thrust inside. That something belongs to the male snake. He also is showing pink from his cloaca, and a short, slender stalk of purple-colored sinew seems to bind the two snakes together. Dianna continues to crawl slowly forward, while the no-name offense crawls backward to keep up, and keep in.

"All *right*! They're screwing!" The Bunny Hugger exclaims.

"We don't call it 'screwing' in our field," the Peach interjects. "It's called coitus."

"Koeetus? What's that?"

"Screwing."

"Oh. Well, ok, koeetus, screwing, no matter! He's got her stuffed like a Christmas goose."

"How you talk! One fine day, we'll make a scientist out of you, and you'll learn to speak the lingo properly."

"Make a scientist out of me? Forget that! Those people are *boring*! Koeetus, huh? That's really boring! Why not call it what it is?"

The Peach just sighs. He has his work cut out for him. The Bunny Hugger drags out his camera. He focuses first on ground zero—the linked tails. It is then noticed that a small cholla sticker is clinging to the male snake's stalk, and is also imbedded in Dianna's cloaca (see figure).

"Check it out, Doc. They've picked up a Sonoran Desert French tickler. Must be the rattlesnake version of *Love Hurts*."

"Jeez! Just take the frickin' picture, would you? We got work to do."

As the photographic process occurs, The Peach is busily pulling tubes, syringes, and various other paraphernalia conducive to processing snakes out of his backpack. The alert Bunny Hugger notices this activity, and abruptly inquires:

"What the hell is that for?"

"We need to process this male."

"What? Process the male? *What for?*"

"Because we need to know if he's going to be the father of Dianna's next litter."

"We already know that! Can't you see for yourself? He's boning, er uh, koeetusing her good! If we process this male, we'll have to break the snakes up. Do you want our girl here to have kids, or not?"

"Oh, he'll go back to her when we're done."

"He will *not* go back to her when we're done. He'll probably figure Dianna is a real bitch—nothing but bad news, because he got in trouble while he was koeetusing her. He'll never touch her again."

"Maybe older, wiser snakes think that way. This is a young buck. He'll hook back up with her."

"You don't know that. I say let 'em screw. I want to see her have kids next year."

"But we have to get some blood from this male if we are to ever know if he's the father of Dianna's next litter!"

"We already *know* he's going to be the father—if you'll just leave him the hell alone. C'mon, Doc, I'm taking pictures here."

"No, no, **NO**!" The normally placid Peach is now seething with scorn. "We're not talking about *pictures* here." (The angry enunciation of the p on "pictures" sends sputters of Peach spittle everywhere). "We're talking about DNA! We're talking about *genetic fingerprinting*! We're talking about cutting edge science—not photographic guesswork. Jeez—get with the program here."

"Oh, I'm with the program here, all right. The program is that I want our girl to have kids. That's *my* program, Doc. *Don't be changing the channels on my program!*"

The Peach sighs again. This sigh is one that reveals intense exasperation. It is a thunderous sigh, an audible whoosh that creates a breeze. The poor Peach is sucking patience from the very ground he stands on. There is tense silence for a few moments. The only sound is that of tiny gears meshing against each other, heavily muffled by an extraordinarily thick skull. Then, the Peach opens his gullet, and takes on a new tactic.

"I can get blood from this male without disturbing them."

"Now that I *gotta* see . . ."

"Then you just watch the *master*, son. Here's what I'm going to do. I'm going for the caudal vein while they're hooked up."

"You're gonna get your fool self bit. Can't you just leave 'em be?"

“I’ve done this before. The male is so into her right now, he won’t even notice.”

And so, the Peach goes down on one knee, syringe cocked and ready. Whilst keeping a wary eye on both smart ends of the snakes, he begins gently fingering his way into the linked tails of the pair. Yup! This is truly a tender moment in the history of field herpetology. Two snakes koeetusing peacefully away, whilst a human interloper thrusts his meaty hands into the mix, gently fingering his way wrist deep through god only knows what kind of disgusting ooze. It is all a genuine *ménage à trois* between snakes and man—lovingly performed for the sake of cutting edge science. The needle of the syringe is deftly thrust home. A split second after that, Dianna’s cloaca regurgitates a beautifully bifurcated tentacle of love. There is an audible popping sound as the pair disengages. The forked hemipenis of the male snake has now been hung out to dry.

“Son of a **BITCH!**” Shouts the outraged Bunny Hugger, who cocks his right arm back, and with a mighty heave, hurls his cheapass plastic snake tongs (a gift from the Peach) flying toward Flagstaff. A large saguaro intercepts the trajectory of the snake tongs, flinching visibly from the impact of the collision. The tongs break into three distinct pieces, and clatter harmlessly to the ground.

The Peach Pit, who has been remarkably quiet through the whole event, suddenly finds his voice.

“Gee Dad,” sayeth the Pit. “Why did he throw his tongs?”

The Peach ignores his son’s question, and instead directs abrupt inquiries toward the Bunny Hugger:

“Oh! Was that a tantrum? Did I just see a *tantrum*?”

The Bunny Hugger is too busy addressing the stars, moon, and saguaros around him to answer the question directly.

“I said, no, **EYE said**, ‘Leave ’em be. Let ’em screw.’ But no, N-O-O-O-O! *You* can’t leave well enough alone. *You* gotta be the big *atrox* vampire of the desert. And now, our girl here won’t have kids next year.”

The squabble is cut short when it is suddenly realized that the snakes have parted company, and the male has crawled out of sight. While seeking the wayward male, a new squabble begins to develop over whether or not to process the new male. The roles reverse in this new and improved squabble. The Bunny Hugger is willing at this point to do a full up processing of it. The Peach is now turning the tables, saying “Gee, if we process him now, he might not go back to our girl.” The Peach’s alter ego is saying “We’re *way* past the point of that happening now. Let’s rock!”

The male is eventually located and fully processed. Mass / snout–vent length / tail length / rattle count / PIT tagged and dropped. It’s a done deal. The trio continues their radio-tracking

into the night. While they are more or less side by side in this effort, it will be a *long* while before diplomatic relations are fully resumed.

Epilogue

The above report ended with the traditional sign-off, which will appear at the end of these words. There is no sense in putting the reader through two of *those*. After Gordon and Emory left that evening so long ago, I tracked Dianna one more time. She was alone. Our new boy, male Ca23, did *not* return to woo her further. In fact, we never saw him again. Score one for the Bunny Hugger.

In August of 2003, not quite one year later, Dianna gave birth to a minimum of five neonates. Score one for the Peach! She used an old badger hole as her nesting site. As was often the case, I never actually saw any of the neonates. I knew she went into that badger hole very pregnant, and I found her 50 meters away the day she left that site. She was viewed looking thin, so I paid that badger hole one last visit. There, I found and collected five shed skins from her neonates. These were all carefully bagged and tagged, and eventually sent along with over 200 other shed skins and vials of blood preserved in EtOH for DNA analyses. The early results of these analyses have been published, but I must admit that I don’t understand a lick of it. Until we are able to go back and spend endless hours of separating the fly scat from the pepper by matching events like the one just described with the players involved, we will only have a general feel for what specifically was happening at our feet. It would make a great conclusion to this article for me to be able to say with assurance whether or not these kids of Dianna were sired by Ca23—the male that caused so much consternation that fateful night. In the end, that might prove who was wrong, and who was right. Does that really matter? In this case—hell no! What matters is that two friends toughed it out to continue onward with a cause that was greater than their own immense egos. Had we called it quits there, we both would have lost mightily. There’s a lesson in that for all of us.

I’d be willing to bet *anything* that I am one of only two people in the world to witness somebody wallow with both hands into the middle of a rattlesnake f*, er uh . . . well . . . you all know the word. My only regret is this: Even though my camera was in my hands for the entire event, ***I was too busy going berserk to take the picture!***

It was the photo opportunity of a lifetime. I could have a field day with the accompanying caption! It’s safe to say that anger clouded my judgment here—and took a lot of the fun out of it all. Anger has a way of doing that.

This here is Roger Repp, signing off from Southern Arizona, where the turtles are strong, the snakes are handsome, and the lizards are all above average.

What You Missed at the February Meeting

John Archer
j-archer@sbcglobal.net

Your society is fortunate to be able to fly speakers into Chicago from almost anywhere. That allows us to present some of the best speakers in the world, but we don't have to search far for excellent presenters that entertain and inform. February's speaker proves my point. We were lucky enough to have our new president talk to us about his herpetological passion. Rich Crowley has been a member of the CHS for many years and has previously served as president. In spite of having done it before, he decided to once again serve your society in the capacity of ~~chief whipping boy~~, uh, ~~head target~~, hmmm, president. For our meeting he offered to share with us a talk titled, appropriately enough, "A Passionate Journey with Short-tailed Pythons."

Rich started with the tale of a trip to Serpent Safari, a herp emporium just north of Chicago, where among a tangle of about 30 boa constrictors he spotted a uniquely colored and exceptionally short snake he was to learn was a "blood python." Two years later he acquired his first "blood python" from a friend. Now he is one of the recognized experts on those snakes. By now you've noticed the quotation marks. I included those because Rich admitted that while all short-tailed pythons (STPs) are typically referred to as blood pythons, only one of the three species can legitimately lay claim to that name. That's why we have scientific names. They cut down on the confusion. We will not discuss taxonomic changes here. Scientific names are still less confusing than common.

So what about those three species? Rich had a nice map



Rich Crowley. Photograph by Dick Buchholz.

featuring Malaysia, Sumatra and Borneo, and showing the ranges of all three.

Python brongersmai, the species that deserves the nominative blood python, ranges across the Malaysian peninsula and wraps around the Gulf of Thailand into Vietnam, as well as covering the northeastern half of the island of Sumatra. Exceptional individuals of this species can reach 9 feet in length, which makes them the largest of the short-tailed pythons. Also known as the Malaysian or

Sumatran pythons, these animals have bold colors—yellows, browns and reds—that make for the most gorgeous patterns of all the STPs.

Python curtus, commonly called the Sumatran (why we use the scientific name) or black python, reaches just under 6 feet in length and ranges along the southwestern half of the island of Sumatra. A mountain range along the length of the island keeps *P. brongersmai* and *P. curtus* separate species. *P. curtus* is a smaller snake with dark black markings and prominent yellow / orange eyes.

The Borneo python (*P. breitensteini*) inhabits lowlands surrounding a mountainous region in the center of the island of Borneo. This species may have brown, orange or cream colors, but no red, and might reach 6½ feet.

A fourth species, *P. kyaiktiyo*, was described in 2011, based on a single adult female specimen found in Burma (Myanmar). Rich says it looks a lot like a yellowish *P. brongersmai*.



Rich used these selfies to illustrate why you should consider things from your snake's point of view. Reaching in with your hand can look threatening to your snake.



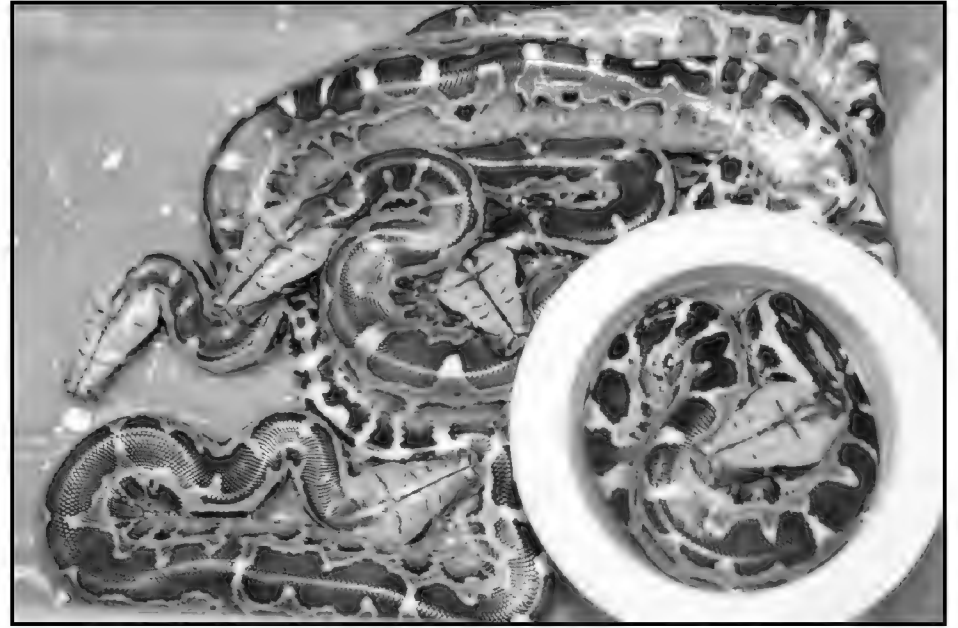
Short-tailed pythons are good mothers.

Rich had a slide using 2015 statistics that showed exports of skins exceeded exports of live animals by a factor of 10 to 18. The pet trade is not the major threat to these animals in the wild.

Rich then talked about husbandry. He said any substrate will do but it must be kept clean. The animals urinate a lot and will not do well in a soiled cage that leads to high ammonia levels and mold growth. Clean water is a must to keep the animals



Two more nicely patterned short-tailed pythons.



Beautiful results of successful breeding.

hydrated. They will not drink from a fouled water bowl and because of the heft of the snakes, water is frequently spilled and fouled. Temperatures should be kept at 78–84°F, and humidity is needed, but airflow must be managed to prevent saturation or too little humidity. Feeding should be regular but these animals can get obese. Rich had an interesting little slide that showed drawings of different weights in the snakes, from too thin to obese.

He then spoke of breeding, and he treated us to a video of a male using his spurs to arouse a female. Fortunately we didn't watch the entire hours-long interaction. Snake porn was followed by pictures of brooding females coiled around clutches of eggs and eggs being incubated. Captive pythons may breed anytime of the year and the activity can get pretty rough. Rich had an amorous couple hurl a water bowl through their glass-fronted cage. A Borneo python's clutch can consist of 24–45 eggs, while blacks might have 20 or so and the bloods only lay 12–18. The eggs are about three-quarters the size of a ball python's. Rich uses moistened vermiculite as an incubation medium, and the eggs normally hatch in about 55 days when kept at 89°F. The young can take up to 5 days to leave the shell once started. Rich stresses that keeping records is important.

Rich talked a little about geriatric problems of these animals and stressed that most other problems are related to bad husbandry. He claimed that when possible a nebulizer was a much better and easier way to deliver medication than injections. He showed us more pictures of these beautiful short-tailed snakes. It's frustrating that we can't show the colors, but you can go to VPI.com to see the range of patterns and colors available.

So our president made us a bit more knowledgeable about these cool snakes. Sometimes it's valuable to stay close to home.

Herpetology 2017

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

SPIDER-TAILED VIPER NATURAL HISTORY

B. Fathinia et al. [2017, *Herpetozoa* 29(3/4):135-142] note that the spider-tailed viper, *Pseudocerastes urarachnoides*, is an endemic snake of western Iran that uses an elaborate caudal structure for luring avian prey. As many as 30 individuals of *P. urarachnoides* were detected in the field, their habitat associations were revealed and the annual activity pattern of 10 individuals was monitored for 13 months. The annual above-ground activity of this viper begins with the emergence from hibernation in early April and ends with the entry into the hibernaculum in late November. The activity pattern is bimodal with peaks in spring and late summer / early autumn. For ambush, *P. urarachnoides* favors concealment by trees over bushes; it prefers ambushing in holes of steep slopes, such as vertical limestone rocks, to flat substrates. Above-ground presence is significantly correlated with temperature and humidity only during some months. These findings contribute fundamental knowledge for future biological and ecological studies, such as population estimation, conservation programs, tourism, and habitat management decisions.

TIMBER RATTLESNAKE LIFETIME REPRODUCTION

W. S. Brown [2016, *Herpetologica* 72(4):331-342] notes that lifetime reproduction is a fundamental demographic variable for all vertebrate species, but rarely has been examined in snakes. In the southeastern Adirondack Mountains of New York, the author used a capture–recapture method over a 36-yr period to study the lifetime reproductive biology of *Crotalus horridus* in a metapopulation of communal overwintering dens. These longitudinal data allowed analysis of the following parameters for many females throughout their reproductive lives: age and size at first reproduction, reproductive cycle length, duration and frequency of reproduction, body mass changes, and fecundity. Within the metapopulation, first reproduction occurred at a mean age of 9.6 yr, mean length of reproductive cycles was 4.2 yr, mean reproductive life span was 9.6 yr, and average fecundity was 7.7 offspring per litter. Nonviable offspring were observed in 20% of field litters. Although several female snakes produced multiple broods (as many as seven litters over spans as long as 32 yr), most females reproduced only once—the mean number of lifetime reproductive events was 1.7 efforts per female. During their gravid year, most females lost 2–3% of their initial mass, but gains and losses as great as 15–20% indicate feeding during gestation. Microgeographic differences were evident within the metapopulation and might be correlated with (1) resource levels that could influence growth rates, or (2) human encounters that could influence survival rates. Conserving *C. horridus* in its northern range depends on recognizing the importance of a suite of reproductive constraints—late age of maturity, long reproductive cycles, and low number of lifetime efforts—that clearly influence the viability and persistence of local populations.

REPRODUCTION AFTER A DECADE IN CAPTIVITY

C. J. Michaels [2016, *The Herpetological Bulletin* 137:24-27] notes that amphibians may be held in captivity for many years without successful reproduction, due to the absence of environmental cues. However, there are few data concerning the potential for amphibians to recover reproductive capacity after such hiatuses or their impact on fecundity and viability. In one male and two female *Paramesotriton chinensis* newts, the author reports successful reproduction including previously unreported oviposition site-guarding behavior, but very low rates of viability, over two breeding seasons after more than a decade of aseasality and reproductive inactivity, following the introduction of appropriate seasonal environmental variation. These findings suggest that reproduction can be achieved in animals that have not reproduced for many years, but that possibly age-related fertility issues may compromise the degree of reproductive recovery.

PESTICIDE LEVELS IN MORELET'S CROCODILES

B. D. Sherwin et al. [2016, *Journal of Herpetology* 50(4):552-558] note that historically Belize has used large quantities of organochlorine (OC) pesticides for agriculture and disease-vector control, yet few tools exist for noninvasive assessment of OC contaminant loads in Belize wildlife. Crocodile caudal (tail) scutes are clipped as a marking technique in wildlife management programs and may also have utility as a minimally invasive, nonlethal technique to assess contaminant burden. The authors collected caudal scutes from 96 Morelet's crocodiles (*Crocodylus moreletii*) in Belize over 2 yr to analyze scute tissues for OCs and to compare the observed OC concentrations among different scute tissue (fat, cartilage, and muscle) and among crocodiles of different age classes, sexes, and collection locations. Organochlorines of the DDT-type subclass were detected in 72 of 96 crocodiles, with methoxychlor detected in all 72 scutes containing OCs and p,p-DDE, p,p'-DDT, and p,p'-DDD detected in 54, 47, and 20 scute samples, respectively. Organochlorines were more frequently detected in scutes of adult crocodiles, but methoxychlor was occasionally observed in juveniles at concentrations two orders of magnitude higher than observed in adults, suggesting maternal offload of methoxychlor to offspring, greater exposure through juvenile habitat and diet, or both. Organochlorines were detected in crocodiles from all sampling locations with more frequent and higher concentrations observed in crocodiles from lagoon habitats than from river habitats. This study demonstrates that scutes can be used as a nonlethal indicator of OCs present in Morelet's crocodiles, a finding which has applications for determining the trophic transfer of OC pesticides through tropical aquatic food webs and for estimating the continuing risk posed to crocodiles and other species by OC pesticides.

INTERNATIONAL TRADE IN WILD-CAUGHT TURTLES

L. Luiselli et al. [2016, *Chelonian Conservation and Biology* 15(2):167-172] analyzed the CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) data set for the years 1990–2010 to depict the main patterns of trade for tortoises and freshwater turtles of wild origin. About 2 million wild individuals were traded over 20 yrs of monitoring, with 48 species (of 335 turtle species in total) belonging to 10 distinct families being regularly traded and over 100 being at least occasionally traded. Most of the traded specimens belonged to the families Testudinidae, Geoemydidae, Emydidae, and Trionychidae (about 93% of trade). The trade of wild individuals reached its peak in the early 2000s, with this pattern being stronger in the Asian region. After the years 2003–2005, there was a substantial decrease in the number of wild exports from the Asian region, with a remarkable growth in the export numbers from the Nearctic region. It is unknown whether the reduction of exported Asian region turtle numbers depended on 1) CITES regulation and supervision or 2) a collapse of the wild populations. There were uneven frequencies of wild turtles traded by biogeographic region, with a higher amount of traded wild turtles coming from Asian and Palearctic regions. There were 107 exporting countries, with Malaysia, the United States, and Indonesia being the most important countries in the trade (each one responsible for over 20% of trade). Overall, there were 66 importing countries, with the most important being the United States (17%), China (15%), and Hong Kong (12%). The conservation implications of the observed patterns are discussed.

COST OF A CARNIVOROUS DIET

N. Ramamonjisoa et al. [2016, *Copeia* 104(4):808-815] note that the conditions experienced during early development may have strong effects on the adult phenotype, and consequently on fitness. Diet quality is an important environmental variable, and, frequently, organisms with low protein diets should achieve higher fitness on high protein ones. As for many omnivores, tadpoles find a greater quantity of protein in animal materials, thus it is often assumed that tadpoles would increase fitness on carnivorous diets. Using an omnivorous tadpole, *Rhacophorus arboreus*, the authors tested the effects of animal diets (chironomid larvae and tubificid worm) and plant diets (high protein alga, spinach, and leaf litter) on post-metamorphic fitness-related traits: body size, locomotory performance, and gut length. All tadpoles metamorphosed at the same size except those on the leaf litter diet that exhibited the longest larval period, the smallest size at metamorphosis, and the lowest locomotory performance. The algal treatment induced faster growth in the tadpoles and produced juveniles with proportionally shorter guts than the smaller juveniles from the litter treatment. As suggested in recent studies, differential post-metamorphic gut length may influence food intake, assimilation efficiency, and growth in metamorphs, but such an assumption needs further clarification. The tadpoles on carnivorous diets metamorphosed into frogs with relatively shorter legs and poor locomotory performance. In contrast to expectations, carnivorous diets impaired post-metamorphic performance in an omnivorous tadpole. The causes of leg abnormalities remain unclear, but the tadpoles possibly suffered from nutritional imbalance on carnivorous diets.

LEATHERBACK ECOTOURISM

K. M. Stewart et al. [2016, *Chelonian Conservation and Biology* 15(2):197-205] report on the St. Kitts Sea Turtle Monitoring Network (SKSTMN), a community-based sea turtle conservation organization operating in St. Kitts, West Indies. Four species of either nesting and/or foraging sea turtles have been recorded in the area around St. Kitts, including leatherback (*Dermochelys coriacea*), green (*Chelonia mydas*), hawksbill (*Eretmochelys imbricata*), and loggerhead (*Caretta caretta*). An open fishing season for sea turtles is active in St. Kitts and Nevis from 1 October through 28 February annually. In 2006, sea turtle fishers in St. Kitts were assessed by the SKSTMN through a survey process to determine the status of sea turtle stocks in the St. Kitts area and to determine the feasibility of developing a local community-based ecotourism project focusing on sea turtles. Based on the results of this survey, the SKSTMN made the decision to develop alternative livelihoods for the fishers to serve as a replacement for the harvest. These included a Sea Turtle Technician Program and a St. Kitts Leatherback Ecotour Package. Prior to the development and implementation of the St. Kitts Leatherback Ecotour Package, a representative survey was prepared and distributed to 3 target groups: local citizens, tourists, and residents. A complete tour package was developed according to the survey results, and the package was offered during leatherback nesting seasons from 2009 to 2014. In 2014, an outcome assessment of the ecotourism initiative was conducted that consisted of electronic survey delivery to a subset of former ecotour participants. These initiatives have resulted in a decrease in the number of sea turtles harvested in St. Kitts annually and have also produced a number of sustainable technician positions for Kittitian citizens on the project.

EASTERN MASSASAUGA DEMOGRAPHICS

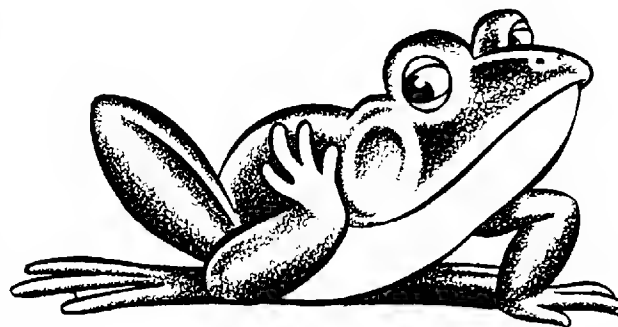
B. D. Johnson et al. [2016, *Journal of Herpetology* 50(4): 534-540] note that reforestation of early successional vegetation types has been implicated in the decline and extirpation of snake species dependent on exposed basking sites. Consequently, basking-site improvement measures (e.g., brush clearing) are frequently proposed to conserve threatened and endangered snake populations; however, demographic response of snakes to vegetation manipulation is largely unknown. This study measured changes in reproductive fitness, survival, and abundance of females in an isolated population of endangered eastern massasauga rattlesnakes (*Sistrurus catenatus*) in years before and after cutting of woody vegetation to create basking opportunities. A total of 181 snakes were marked from 2006 to 2014, over which time substantial vegetation was cleared in key gestation areas to increase availability of basking sites for gravid females. Reproductive cycles of females in this population appeared to be primarily biennial, with parturition dates strongly influenced by maximum daily summer temperatures. Estimated annual survival ($s = 0.78$, 95% confidence interval: 0.67–0.86) and number of gravid females (range = 9–46 individuals) showed no temporal trend, nor did body condition (mass relative to length) of gravid females. The results imply that if a demographic response to basking-site manipulations occurs in eastern massasauga rattlesnakes, it will significantly lag management intervention.

The Tympanum

Outstanding Story by Roger Repp in Feb 2017 *Bulletin*

I am writing to ask that you please tell your contributing writer, Roger Repp, how grateful I am for the joy and excitement he conveys in his story on the first hatching of Gila Monsters in the wild. His thrilling article on hatching these treasures, in my opinion, ranks with the finest nature writing by such outstanding authors as Rachel Carson, Barbara Kingsolver, and Archie Carr.

By pure coincidence . . . , seventy-two years ago, as an officer in the US Navy, I was having another kind of adventure, transport-



ing US Marines to the enemy held beaches of Iwo Jima in my navy landing craft. It may seem a stretch of the imagination but the excitement conveyed in Roger's Gila story is similar, in a way, to the intensity of putting marines ashore in our Iwo Jima landings of February 1945.

So thank you . . . Roger, for sharing with your readers this important scientific breakthrough with the little Gilas!

Best Aloha,
Paul Breese, Director Emeritus, Honolulu Zoo

Minutes of the CHS Board Meeting, February 10, 2017

President Rich Crowley called the meeting to order at 7:40 P.M. Board members John Bellah, Lisette Chapa and Jessica Wadleigh were absent.

The minutes of the January 13 board meeting were read and accepted.

Officers' Reports

Treasurer: Andy Malawy went over the January financial report.

Membership secretary: Mike Dloogatch read the list of expiring memberships. He mentioned the loss of several members recently due to death. Rich Crowley suggested that we might want to acknowledge in some way those members who pass certain milestones of membership length.

Media secretary: Morgan Lantz needs to set up @chicagoherp.org emails for new board members who do not have one as of yet. Morgan suggested adding photos of the board members to the website. There is a need to set up a system of file-sharing, both private (board members only) and public.

Sergeant-at-arms: Mike Scott reported attendance of 34 at the January 25 general meeting.

Committees

Shows: Dick Buchholz read the list of upcoming shows—quite a few in the coming month.

Adoptions: Linda Malawy listed a few animals available for adoption. Lisette Chapa prepared a form to be filled out by members seeking particular species. She has shared this via Dropbox.

Jr. Herpers: Dan Bavarsha reported 85 people at February 5 meeting. Highest attendance to date—standing room only, even with a bunch of the kids sitting on the floor in front.

Library: Teresa Savino is still seeking someone willing to take charge of the library.

Grants: Mike Dloogatch reported that the committee meeting to determine the CHS grant recipients would be held on the 11th.

ReptileFest: John Archer reported that the theme of this year's 'Fest will be conservation. John emphasized that we *must* find someone else to run it next year. He also mentioned that we need to find an alternative venue (as a fall-back in case we ever lose NEIU, and also to strengthen our negotiating position). Handling of aquatic turtles by the public will not be allowed this year.

The meeting adjourned at 9:25 P.M.

Respectfully submitted by recording secretary Gail Oomens



Steve Johnson

Advertisements

For sale: **highest quality frozen rodents.** I have been raising rodents for over 30 years and can supply you with the highest quality mice available in the U.S. These are always exceptionally clean and healthy with no urine odor or mixed in bedding. I feed these to my own reptile collection exclusively and so make sure they are the best available. All rodents are produced from my personal breeding colony and are fed exceptional high protein, low fat rodent diets; no dog food is ever used. Additionally, all mice are flash frozen and are separate in the bag, not frozen together. I also have ultra low shipping prices to most areas of the U.S. and can beat others shipping prices considerably. I specialize in the smaller mice sizes and currently have the following four sizes available: Small pink mice (1 day old—1 gm) , \$25 /100; Large pink mice (4 to 5 days old—2 to 3 gm), \$27.50 /100; Small fuzzy mice (7 to 8 days old—5 to 6 gm) , \$30/100; Large fuzzy mice / hoppers (10 to 12 days old—8 to 10 gm), \$35/100 Contact Kelly Haller at 785-234-3358 or by e-mail at kelhal56@hotmail.com

For sale or trade: Probable pair of albino Harquahala rosy boas. They were born in my home in late 2016 and are feeding on f/t peach fuzz mice. Pure locality animals exhibiting a recessive gene. Viewing is possible, parents on site. I can drive to meet a reasonable distance, or ship if you are not local. Discount if you pick them up from my home. Cash, credit card or PayPal. Call or text 510-318-1715, or email elenabmoss@gmail.com.

Herp tours: **Costa Rica herping adventures.** Join a small group of fellow herpers for 7 herp-filled days. We find all types of herps, mammals, birds and insects, but our target is snakes. We average 52 per trip, and this is our 10th year doing it. If you would like to enjoy finding herps in the wild and sleep in a bed at night with air-conditioning, hot water and only unpack your suitcase once, instead of daily, then this is the place to do it. Go to our web-site <http://hiss-n-things.com> and read the highlights of our trips. Read the statistics of each trip and visit the link showing photos of the 40 different species we have found along the way. E-mail at jim.kavney@gmail.com or call Jim Kavney, 305-664-2881.

Line ads in this publication are run free for CHS members — \$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to mdloogatch@chicagoherp.org.

Natural TORTOISE FOODS





Natural Grassland Tortoise Food



Natural Forest Tortoise Food

NATURAL Grassland Tortoise Food and NATURAL Forest Tortoise Food

- High fiber, low protein diet just like they get in nature.
- See the pieces of grass in each pellet.
- Natural! No artificial colors, flavorings, or preservatives added.
- Colored corn or wheat based foods should not be fed as a regular tortoise diet, as these types of foods could lead to unnatural shell growth and health problems (i.e. pyramiding).



ZOO MED is a proud sponsor of the



www.turtlesurvival.org

Look for these other fine NATURAL FOODS from ZOO MED:



Aquatic Turtle Hatchling Formula



Aquatic Turtle Growth Formula



Aquatic Turtle Maintenance Formula



Box Turtle Food



Adult Iguana Food



Juvenile Iguana Food



Adult Bearded Dragon Food



Juvenile Bearded Dragon Food

ZOO MED LABORATORIES, INC. • 3650 Sacramento Dr. • San Luis Obispo, CA 93401

www.zoomed.com

In Memoriam: H. William “Bill” Peterson

The herpetological community lost a friend and colleague on January 29, 2017, with the passing of Bill Peterson. Psychologist, teacher, mentor and friend, he will be missed by many. Always willing to step up and lend a hand, he was a staunch supporter of the Chicago Herpetological Society. He served as chair of the adoptions committee for a time, and earlier contributed a monthly column for the *CHS Bulletin*. Bill was a pupil and long-time friend of the late Hobart M. Smith, and all herps were his passion. We will remember his wit and wisdom, and mourn the loss of this well-loved gentleman.

News and Announcements

SHOW SCHEDULE

In addition to ReptileFest the Chicago Herpetological Society puts on many live animal displays throughout the year. The events now scheduled for March through June are listed below. CHS members who wish to participate in an event should call or text ahead to Show Coordinator Dick Buchholz, 805-296-9516, to confirm.

- Notebaert Nature Museum, first full weekend of each month, Saturday and Sunday, 10 A.M. – 3 P.M.
- All Animal Expo, first Saturday & third Sunday of each month, 10 A.M. – 3 P.M., Dupage County Fairgrounds, Wheaton.
- Kids Expo 2017, March 31 – April 2, Friday 3 P.M. – 9 P.M., Saturday 9 A.M. – 5 P.M., Sunday 10 A.M. – 5 P.M., Renaissance Schaumburg Convention Center, Schaumburg.
- Chicago Pet Show, April 29–30, 10 A.M. – 5 P.M., Oak Lawn Community Pavilion, Oak Lawn.
- Rockin’ for Reptiles, June 24, Midwest Museum of Natural History, Sycamore.
- Greek Festival, June 24–25, 3 P.M. – 9 P.M., Greek Orthodox Church, Palatine.
- Greek Festival, July 8–9, 3 P.M. – 9 P.M., St Andrews Greek Orthodox Church, 5649 N Sheridan Rd., Chicago.

NEW CHS MEMBERS THIS MONTH

Benjamin Cox
Renee Darr
Cindy Elliott

Anne Hughes-Wagner
Eduard Levit
Angela Lipovetsky

Adam Mikosz
Gina Miller
Melissa A. Wilson Sayres

You still have time!

It’s not too late to register as an exhibitor for ReptileFest 2017

Last year we had record crowds

And more fun than ever

We can do better

Register now at ReptileFest.com

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, March 29, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Dr. Eric T. Hileman**, a postdoctoral fellow at Trent University in Peterborough, Ontario, Canada, will speak about “Demography and Life History of an Imperiled North American Rattlesnake (*Sistrurus catenatus*).” Eric is the former Director of Conservation, Education, and Animal Welfare at the Racine Zoo in Racine, Wisconsin. He recently earned his Ph.D. from Northern Illinois University, and is interested in traditional and spatially explicit capture-recapture models, population ecology, life-history evolution, and conservation biology. In this talk, Dr. Hileman will discuss research he and his collaborators are doing that will inform conservation efforts for the imperiled eastern massasauga.

The speaker at the April 26 meeting will be **Gerry Salmon** of Boerne, Texas. Gerry’s program will be “Prey Selection in Copperheads (*Agkistrodon laticinctus*)—A Study Based on Western Texas Populations.”

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago’s newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Afterwards, some of us adjourn to a local restaurant for food, drink and conversation. All are welcome.

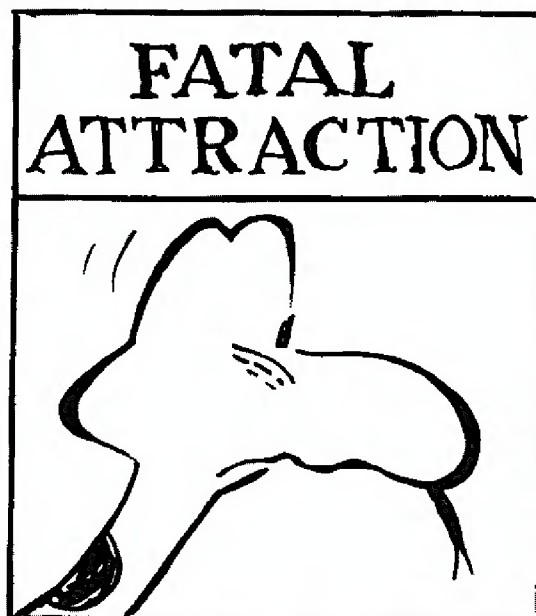
Board of Directors Meeting

Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., Friday, April 14, 2017, at the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg.

The Chicago Turtle Club

The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the group’s Facebook page.

THE ADVENTURES OF SPOT



Periodicals Postage
Paid at Chicago IL

CHICAGO HERPETOLOGICAL SOCIETY

Affiliated with the Chicago Academy of Sciences

2430 North Cannon Drive • Chicago, Illinois 60614
